

15. mesomelas, Hbst
 dimidiata, (Mshn), Steph.
 16. basalis, Erich.
 17. munda, Erich.
 18. nigripennis, Pk.
 19. Hislopi, Woll.
 20. apicalis, Erich.
 21. analis (Schüp.), Erich.
 testacea, Steph.
 atra, Steph.
 22. ruficornis, (Mshn), Steph.
 terminata, Com.
 dorsalis, Steph.
 23. versicolor, Erich.
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IX. *On the Recent Progress of Micro-Lepidopterology on the Continent.* By H. T. STAINTON, Esq.

[Read July 7th, 1856.]

TWENTY-FOUR years have now elapsed since the publication of Treitschke's first volume on the *Tineæ*. This was the first general descriptive work treating of that group of *Lepidoptera* that had appeared *on the Continent* since the time of Fabricius. It was a work which at once rendered the figures of Hübner far more generally serviceable, for the frequently misnamed figures of Hübner were here referred to their correct names, and their histories and habits were given. Sometimes histories were applied to the wrong species, and many species were handled in a manner to create confusion. But whatever may be the faults of Treitschke's work, it was a vast step, and it contributed very materially to the production of Stephens's fourth volume of his "Illustrations," which appeared in 1834 and 1835.

When a general work on a group of insects has appeared, each Entomologist seeks there for the name of any species he may chance to meet with; and if he happens to find it there, well and good, but if not he probably describes it in some scientific journal or in the transactions of some learned society: but were the general work non-existent, he would feel utterly disheartened at the

apparent impossibility of naming his capture; there would be no pleasure in catching a new species, and the science would stand still.

We are always apt to compare works with those which have *succeeded* them, whereas it would be more correct to compare them only with those which have *preceded* them. Viewed in this light, however intrinsically worthless Treitschke may now appear to us, there can be no question that it rendered most essential service to the science in its day, and contributed very materially to the onward progress of Micro-Lepidopterological discovery.

In 1838 appeared Duponchel's eleventh volume of his "*Lepidoptères de France*." Published after Treitschke's and Stephens's works had given their impulse to the study, it is not surprising that in many respects it was an improvement upon either, and embellished with coloured figures of all the insects it described, one would have thought that France, possessing such a work, would soon take the lead in the path of *Tinea*-investigation. But it has not been so, and this volume of Duponchel's remains as a sort of high water-mark to show the highest point which the study of the *Tineæ* ever attained in France. Even Duponchel himself, in his Supplement, came down-hill with a fearful velocity, and no one has yet been found in France to repair the tissue of blunders he then perpetrated.

But one year after the publication of Duponchel's handsome 8vo. appeared a small paper in a little-known German scientific journal; yet this paper has exercised an influence over the development of the science, such as it seldom falls to the lot of one individual to wield.—Zeller's "*Versuch einer naturgemässen Eintheilung der Schaben*" appeared in Oken's "*Isis*" for 1839.

It will be interesting to notice the cause of this small paper exercising so vast an influence. Those who were collecting this group of insects in this country, twenty or even ten years ago, are aware that species were referred to certain genera, by rules entirely arbitrary; this was an *Aphelosetia*, that was an *Amaurosetia*; but *why* it was so, no one knew; it was all guess work. This fault was not peculiar to us as English: it prevailed in Germany, it prevailed in France; in the last-named country, I believe, it prevails to the present day. Now it was impossible to look through this "*Attempi at a Systematic Arrangement of the Tineæ*" of Zeller, without perceiving that good tangible characters were given for the genera; that they were, so to speak, mathematically distinct. You had only to take up an insect, examine its palpi, antennæ, form of hind wings, &c., and at once you could settle in

which genus to place it, without any reference to the markings on the wings.

Some may remember, that *Marginepunctella* and *Perlepidella* (then called *Formosella*) used to be placed side by side in the same genus, and it was even questioned by some whether they were specifically distinct; now by a reference to the smoothness or roughness of the head, by the structure and clothing of the palpi, it is at once seen that they belong to genera far apart.

Naturally this paper of Zeller's produced the greatest effect in Germany, where the serial work of Fischer Von Röslerstamm, with coloured illustrations of the metamorphoses of many of the Micro-Lepidoptera, appeared continuously from 1834 to 1843.

But Professor Zeller was not content with having indicated the arrangement and genera of the *Tineæ*; he proceeded to work up, monographically, the species in individual genera, and in 1846 appeared, in the first volume of the "Linnæa Entomologica," his treatise on the genus *Lithocolletis*; and each succeeding volume of the "Linnæa" has contained papers by the same author on one or more genera of *Tincina*, of which the following is a brief enumeration:—

- 1846. Vol. I. *Lithocolletis*.
- 1847. Vol. II. *Argyresthia*, *Ocnerostoma*, *Gracilaria*, *Coriscium* and *Ornix*.
- 1848. Vol. III. *Lyonetia*, *Phyllocnistis*, *Cemistoma*, *Opostega*, *Bucculatrix*,
Nepticula, *Trifurcula* and *Tischeria*.
- 1849. Vol. IV. *Coleophora* and *Goniodoma*.
- 1851. Vol. V. *Incurvaria*, *Micropteryx* and *Nemophora*.
- 1852. Vol. VI. *Euplocamus*, *Tinea*, *Eriocottis* and *Lampronia*.
- 1852. Vol. VII. *Lypusa*, *Talapovia*, *Solenobia*, *Diplodoma* and *Xysmatodoma*.
- 1853. Vol. VIII. *Adela* and *Nemotois*.
- 1854. Vol. IX. *Exæretia*, *Depressaria* and *Orthotælia* (with some exotic genera).
- 1855. Vol. X. *Butalis*.

But the very fact of there being such excellent Monographs made the want of a good general work on the subject more painfully felt; and the Monographs published but a few years ago are already quite obsolete, by no means representing the state of our knowledge at the present day, so that the subject was seen in a distorted point of view, only a small portion being as it were in focus, and the rest more or less indistinct and misty.

The group of *Micro-Lepidoptera* had been studied in Finland, by Herr Tengström and Dr. Nylander; in Livonia, by Madame Lienig; in Stettin, by Graf Nicelli; in Breslaw, by Dr. Wocke; in Vienna, by Herrs Mann, Heeger, Lederer; in Berlin, by Herr Bouché; in Jena, by Herr Schläger; in Hanover, by Herr Kross-

man; in Regensburg, by Dr. Herrich-Schäffer, and Herrs Hoffman; in Frankfort-on-the-Main, by Senator Von Heyden, Herrs Schmid and Mühlig; and in Freiburg, by Dr. Reutti; and in Zurich, by Herr Bremi and Professor Frey: was it wonderful that a section of Entomology, thus enthusiastically cultivated from flat, fenny Finland to Switzerland, with its Alpine lakes, should progress?—wherever the German language was current, the impetus given to the study by the writings of the Glogavian Professor was felt and appreciated. Professor Zeller himself ransacked Sicily; Italy yielded her spoils to the energetic temperament of Herr Mann and his wife, and the Sardinian Micro-Lepidoptera have still a lively recollection of Dr. Staudinger's visit to their island. Nay, Dr. Wocke penetrated into France, carrying off a new *Lithocolletis*, which, as though in derision of the French Entomologists, who were not acquainted with it, (and are, perhaps, not yet aware of its existence,) he named *Parisiella*. The Germans appeared to have found their mission was not only to investigate the riches of their own country, but they looked on Italy, Spain and France as foreign countries to be explored; just as Mr. Wallace goes out to the Brazils and to Borneo and Sumatra, not trusting to the natives of those countries working out the natural histories of the forms of animal and vegetable life by which they are surrounded.

Dr. Herrich-Schäffer, in the progress of his "Systematische Bearbeitung der Schmetterlinge von Europa," arrived in 1853 at the fifth volume, which contains the *TINEINA*; this volume, now completed, consists of 394 pages of text quarto, with upwards of ninety plates, containing more than 800 coloured figures. Such a work may well be conceived to be a vast storehouse of information, a sort of dictionary of the groups of insects on which it treats. Containing as it does upwards of eleven hundred species of European *Tineina*, it is evident that no great amount of detail could be expected in so limited a space. Dr. Herrich-Schäffer, whose labours in other branches of Entomology have prevented his giving his whole attention to the small moths, has produced a volume that will always be useful, and which, on account of the plates, will remain valuable 100 years hence; but in the system and in the genera, there is much with which those who have worked more exclusively at the group will hardly be disposed to agree, and even in the separation of allied species we miss many nice discriminations that had already been pointed out by others.

The first systematic work on the group that had appeared in Germany since Treitschke's volumes were published, one sees at

a glance how vast a stride had been effected; but during the last month, an unpretending 8vo. volume, of 430 pages, without plates, has appeared, which at once takes its stand as *the* Continental work on the *Tineina*.

It is impossible to overestimate the value, the utility of the "Tineæ and Pterophori of Switzerland," by Professor Frey:* though specially applying only to the *Tineæ* of Switzerland, yet as few of the species are peculiarly Swiss, and even those may be found elsewhere if well sought for, it will, on account of the immense amount of systematized details it gives of the habits of the families, genera and species, of their geographical distribution throughout Europe, be read with extreme interest in every corner of Germany, and indeed wherever the German language is understood. It is hardly possible to conceive a more enjoyable book for a student of the *Tineina*; in the genus *Lithocolletis* eight pages are devoted to *Pomifoliella*, *Oxyacanthæ*, *Cydoniella*, *Sorbi*, *Torminella* and *Cerasicolella*! In the genus *Nepticula* at least *eight new species* are described!!

Frey's work will not in any way interfere with the usefulness of Herrich-Schäffer's; each renders the other of more use than it otherwise would have been. It is worked out in a somewhat similar style to my volume of the "Insecta Britannica," but far more completely; going far more into detail, and discussing, as already noticed, the geographical distribution throughout Europe of each species, genus and family; besides, it incorporates all the latest and most recent discoveries, rectifies errors committed by Herrich-Schäffer or myself. In short, this volume clearly establishes the reputation of Professor Frey of Zurich as the first *Micro-Lepidopterist* in Europe.

* Die Tineen und Pterophoren der Schweiz, von Prof. Heinrich Frey. Zurich, Verlag von Meyer und Zeller. 1856.